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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,912	10/22/2001	Rainer Kuth	2000P13284	8529

466 7590 05/02/2005

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EXAMINER

LAVIN, CHRISTOPHER L

ART UNIT PAPER NUMBER

2621

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,912

Applicant(s)

KUTH, RAINER

Examiner

Christopher L Lavin

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-16 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

2. The following quotations of 37 CFR § 1.75(a) is the basis of objection

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

Claim 9 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery. The term "waveform" lacks antecedent bases. This objection could be overcome by changing "the waveform" to "a waveform".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claim 7 – 9, 12, 13, 15 and 16 rejected under 35 U.S.C. 102(e) as being anticipated by Weisman (6,674,879).

In regards to claim 7, Weisman discloses A device for automatically sorting individual images of a moving part that moves in a periodic manner, comprising: an examination monitor, i.e., display monitor, having a storage device, i.e., hard drive or mass storage, for data records representing the individual images (col. 6, lines 54 – 57; col. 6, lines 12 – 21); and a measuring an evaluation device which identifies in the data records at least one feature of the moving part appearing in the individual images, and sorts the data records into a cyclic sequence based only on displacement of the at least one feature between different said images represented by the data records and a periodicity of the moving part (col. 8, lines 39 – 60: Weisman discloses a device which uses R-waves, i.e., periodicity information, and edge detection to track and sort the motion of a heart.).

In regards to claim 8, The device as claimed in claim 7, wherein the cyclically ordered data records are combined to form a film (col. 6, lines 57 – 67).

In regards to claim 9, The device as claimed in claim 7, wherein the waveform on which the periodicity is based can be prescribed by an input device (col. 5, lines 15 – 19: The R-Wave is a waveform which has periodicity.).

In regards to claim 12, The device as claimed in claim 7, wherein the data records are individual images of X-ray pictures (col. 4, lines 20 – 24: Weisman teaches

Art Unit: 2621

that CAT images can also be used in this apparatus, CAT technologies use x-rays to obtain images.).

In regards to claim 13, The device as claimed in claim 7, wherein the data records represent individual MR images (col. 4, lines 20 – 24: Weisman teaches that MR images can also be used in this apparatus.).

In regards to claims 15 and 16, The device of claim 7, wherein the feature includes at least one of a line and two separate points of the moving part and the displacement of the at least one feature is defined by at least one of distance and phase shifts (col. 8, lines 47 – 53).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohning in view of Gaarder (3,575,162).

4. In regards to claim 10, Weisman as shown above in the rejection of claim 9 discloses a device for sorting cyclic motion images. Weisman discloses that the device is used to monitor the human heart. Weisman however does not specifically state the waveforms used for sorting the data records are triangular, rectangular or sinusoidal.

5. Gaarder teaches in the paragraph starting at column 5, line 9 that a heart pulse can be read in as a sinusoidal waveform.

6. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to use a sinusoidal waveform based on the ECG signal to sort the data records. A sinusoid is one of the classic cyclic waveforms. There are many equations that have been developed over the years that make dealing with such a waveform extremely easy. So sorting the cyclic data based on a sinusoid would be easy and efficient.

7. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weisman in view of Davantes (6,252,924).

8. In regards to claims 11 and 14, Weisman discloses a device for sorting cyclic records which uses an ECG signal. The claims call for a device which records the images without frequency and phase relationships, i.e., an ECG.

9. Davantes teaches (col. 3, lines 45 – 64; col. 4, lines 25 – 45; col. 5, lines 46 – 54) that heart motion can be tracked in CT images without the use of an ECG. By identifying systolic and diastolic periods Davantes is sorting the images. An ultrasound image could be replaced with a CT image to obtain a different view, but the two technologies

can provide comparable images. Finally it should be noted that a CT device captures images stroboscopically.

10. Therefore it would have been obvious to one having ordinary skill in the time of the invention to remove the ECG signal from Weisman as taught by Davantes and still track and sort the heart images. Davantes teaches (col. 5, lines 46 – 54) that removing an ECG saves money. By using Davantes method for measuring motion instead of the ECG Weiman can save money in the construction of the device without loss of information.

Response to Arguments

11. Applicant's arguments with respect to claims 7 - 12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

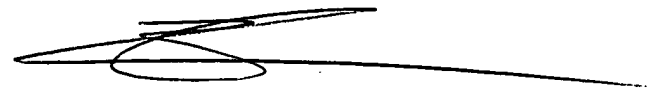
14. US. Pat. 6,289,135 discloses a system for tracking periodic motion using feature extraction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher L Lavin whose telephone number is 571-272-7392. The examiner can normally be reached on M - F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLL



BRIAN WERNER
PRIMARY EXAMINER

Application/Control Number: 09/982,912
Art Unit: 2621

Page 8